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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/955,030	09/19/2001	Kimiyuki Ito	44084-498	9406

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EXAMINER

RODEE, CHRISTOPHER D

ART UNIT PAPER NUMBER

1753

DATE MAILED: 12/13/2001

4

Please find below and/or attached an Office communication concerning this application or proceeding.

MF-4

**Office Action Summary**

Application No.

09/955,030

Applicant(s)

ITO ET AL.

Examiner

Christopher D RoDee

Art Unit

1753

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13-21 and 31-42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-21 and 31-42 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 08/693,717.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 & 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 1753

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 20, 32, and 34-42 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claims 20 and 32 have been amended or presented to specify amounts of tantalum-doped tin oxide in the exterior surface layer. The specification only specifies these amounts where the tin oxide is present with a binder resin (spec. p. 33, l. 9-12; p. 34, l. 10-13; original claim 20). The specification does not present these amounts for a layer not containing a binder, such as a layer containing other inorganic materials but no binder.

New claims 34-42 do not have basis in the as-filed specification because there is no disclosure of "organic charge transporting material". Specific charge transporting materials are disclosed (spec. p. 37, l. 5-11), but these specific materials do not establish possession of all organic charge transporting materials. The current claim includes materials other than those specified in the original disclosure, such as thiophenes and diphenquinones. The inclusion of these compounds raises the issue of new matter and a lack of written description.

Art Unit: 1753

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13-21 and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rokutzono *et al.* in US Patent 5,008,172 in view of Bergmann *et al.* in US Patent 5,571,456.

Rokutzono discloses a photosensitive member having an electroconductive substrate, a photoconductive layer on the substrate, and a surface protective layer (col. 2, l. 50-61). The photoconductive layer contains a charge transport layer and a charge generation layer containing organic charge generation material (col. 4, l. 28-29 & 32-34). The surface protective layer contains a binder resin and metal oxide particles that have been surface treated by a silane coupling agent or a titanium coupling agent. Useful metal oxides include tin oxide doped with antimony (col. 2, l. 68 – col. 3, l. 1). These particles serve to lower the high resistivity of conventional surface layers (col. 1, l. 58 – col. 2, l. 8). These particles have a size of 0.3 microns or less, preferable 0.1 microns or less (col. 3, l. 3-7). Example I presents a photosensitive member having a surface layer of 5 micron thickness formed from a solution having 18 parts of the metal oxide in a 30 weight parts solution of resin (40 wt. %). The metal oxide particles of the reference would be expected to be conductive because they lower the resistivity of the protective layer. The reference does not disclose tantalum doping of the tin oxide.

Art Unit: 1753

Bergmann discloses transparent coatings prepared from conductive tantalum-doped tin oxide powder having a size of 0.05 to 15  $\mu\text{m}$  (cols. 3-4). This powder is processed into a layer with a binder resin. Useful doping amounts are 0.5 % tantalum as seen in Example 1, 2 % tantalum in Example 2, and 8.6 % tantalum in Example 3, for each tin oxide. Antimony and tantalum doped tin oxides are disclosed as conductive in the reference (col. 1, l. 41-45; Example 15).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate a tantalum-doped tin oxide powder into the conductive layer of Rokutanzozo in place of those conductive powders disclosed by that reference because Bergmann discloses that conductive tantalum-doped tin oxide powder is environmentally acceptable (col. 2; col. 3, l. 26-38) over metal-containing antimony-doped powders, which also discolor. Further, a layer of this powder can be formed from an aqueous dispersion (col. 2). The aqueous dispersion is more desirable than less environmentally acceptable organic solvents. The artisan would also have been expected to optimize the amount of the doped tin oxide to give the resistivities desired by the reference.

Claims 34-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rokutanzono *et al.* in US Patent 5,008,172 in view of Bergmann *et al.* in US Patent 5,571,456 as applied to claim 13-21 and 31-33 above, and further in view of *Organic Photoreceptors for Imaging Systems*, to Borsenberger, pp. 25-35 & 289-296.

Rokutanzono and Bergmann were discussed above. The references do not specify the charge transport layer as being organic, but the Borsenberger text discloses organic materials are well known in the art for laminate photoconductors (pp. 28-29). The organic materials permit the artisan to produce layers having flexibility and low thermal generation rates (pp. 29-

Art Unit: 1753

30). Organic layers also have a low production cost (p. 30). Specific processes for forming the organic charge generation and organic charge transport layer are given on pages 289-296. As seen in Figure 1 (p. 290), an overcoat layer is a common expedient for laminate photoconductors having organic layers.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use an organic charge generation and organic charge transport layer as the photosensitive layer in Rokutanzono because the primary reference discloses that laminate photoreceptors having charge generation and charge transport layers are desired and the Borsenberger reference teaches that organic charge generation and organic charge transport layers are useful in the art because of their low production cost, low thermal generation characteristics, and flexibility. Flexibility would be particularly desirable in Rokutanzono when producing belt photoreceptors (col. 4, l. 52). The other reasons for holding of obviousness in the parent rejection are incorporated here.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher D RoDee whose telephone number is 703 308-2465. The examiner can normally be reached on most weekdays from 6 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on 703 308-3322. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872-9310 for regular communications and 703 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0661.

Application/Control Number: 09/955,030

Page 6

Art Unit: 1753

cdr  
December 11, 2001

  
**CHRISTOPHER RODEE**  
**PRIMARY EXAMINER**